

FIG 1

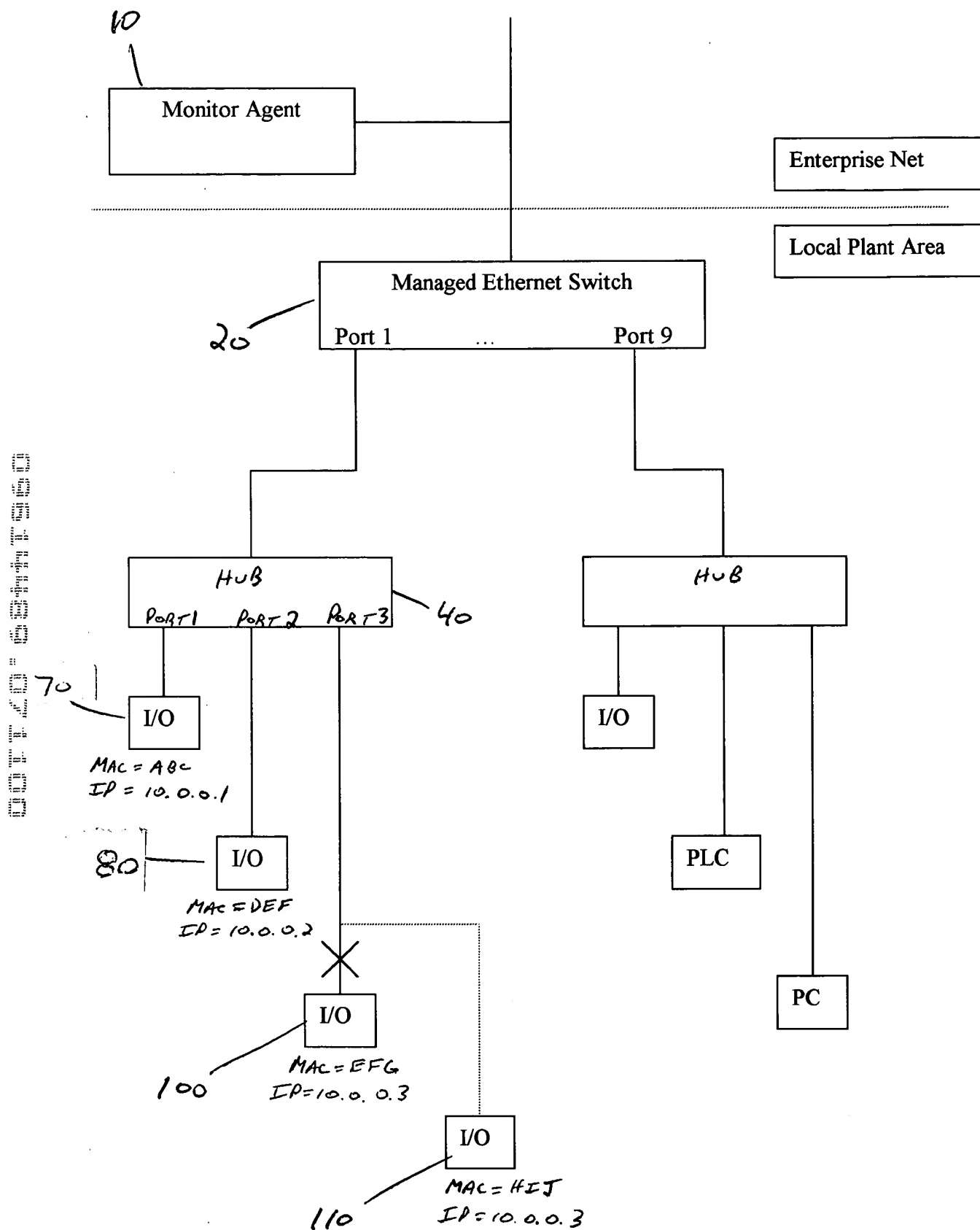
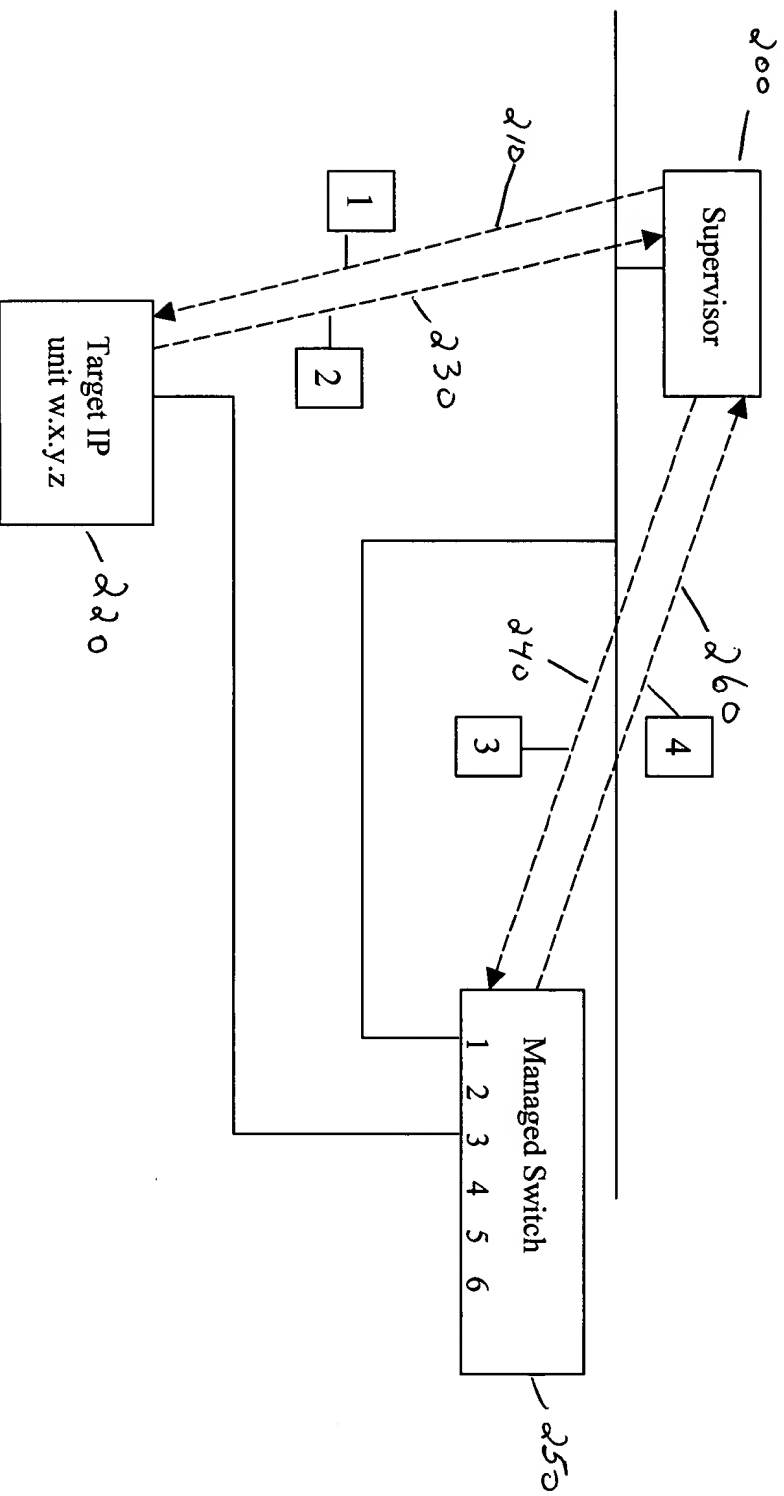


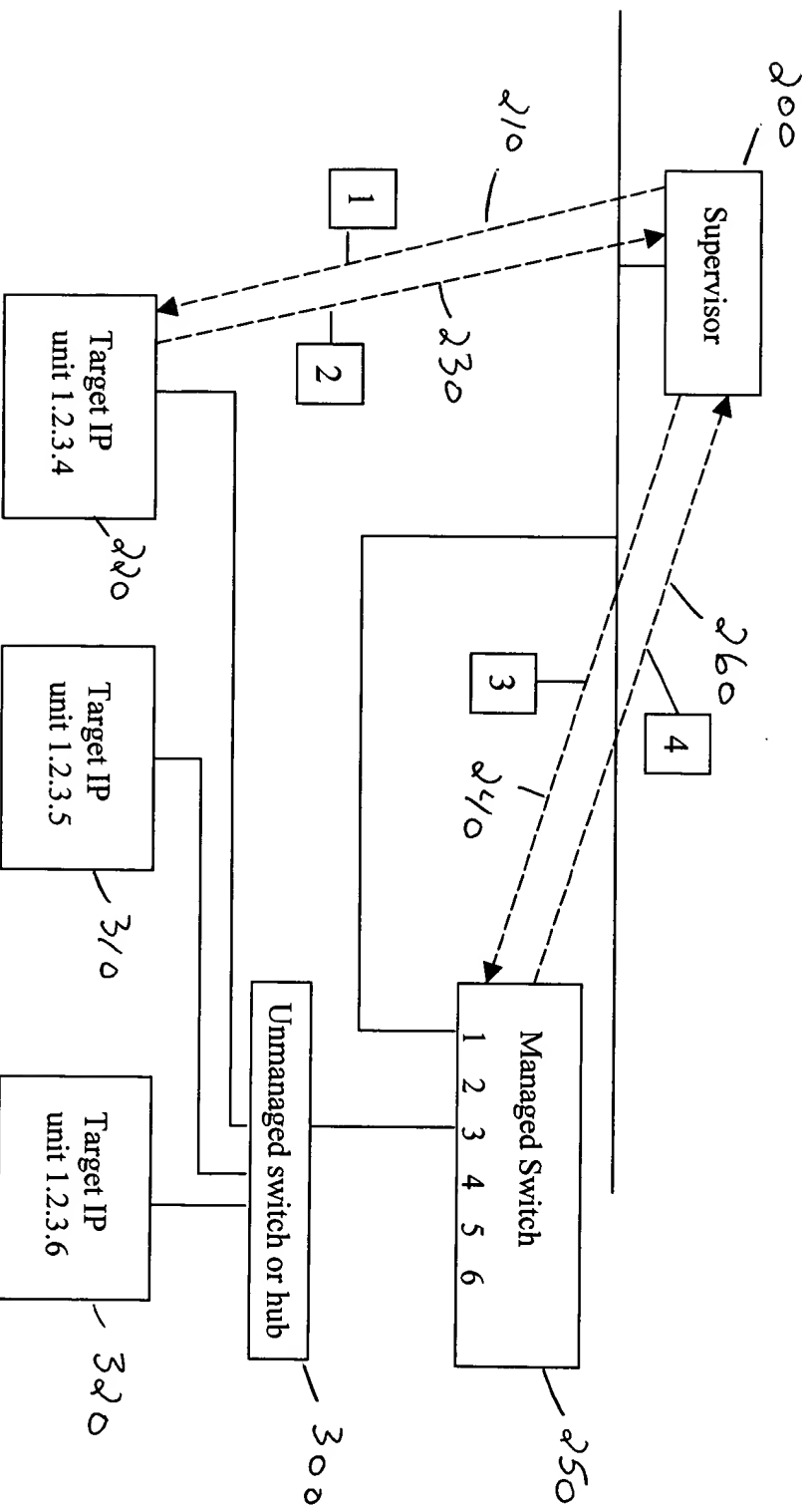
FIG 2

Discovery / confirmation sequence. Find MAC address of target and record its canonical location (numbered port of supervised switch) Dedicated port scenario



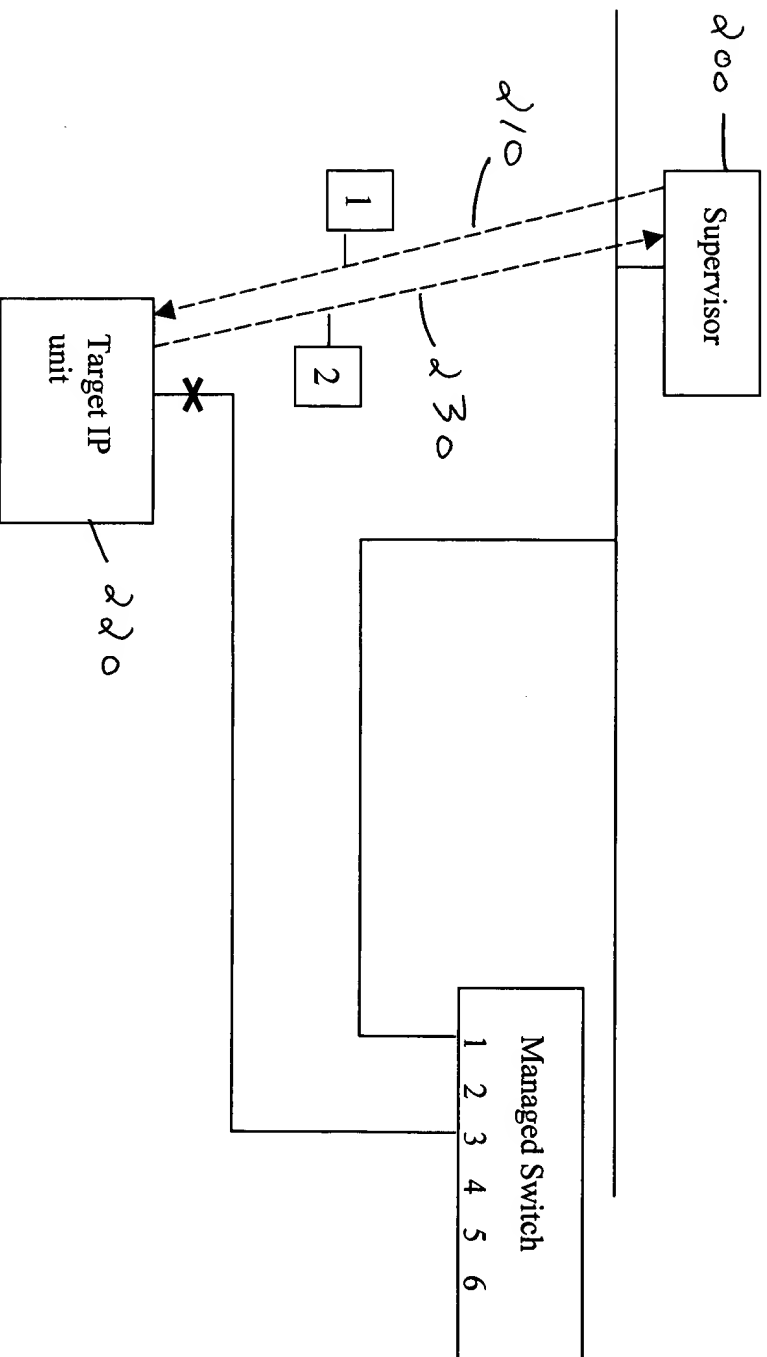
1. ARP Request - inquire MAC address of IP address w.x.y.z (broadcast)
2. ARP response - MAC address of requested IP address is xxx
3. SNMP Findport request - request port number of MAC xxx
4. SNMP Findport response - port number of MAC xxx was 3

Discovery / confirmation sequence. Find MAC address of target and record its canonical location (numbered port of supervised switch). Shared port scenario.



1. ARP Request - inquire MAC address of selected IP address 1.2.3.4 (~~attacker~~ (b6 64:5c:44:57))
 2. ARP response - MAC address of requested IP address is xxx
 3. SNMP Findport request - request port number of MAC xxx
 4. SNMP Findport response - port number of MAC xxx was 3
- Targets are automatically determined to be sharing port 3 of the switch.

Confirm presence sequence - interrogate target at periodic interval. Absence of response indicates target 'down'. A single target down in a canonical location becomes a reassignment candidate. Dedicated port scenario.



1. ARP Request - inquire MAC address of selected IP address (unicast)
 2. ARP response - MAC address of requested IP address is xxx
- If no response is received, signify that the target IP unit is 'down'

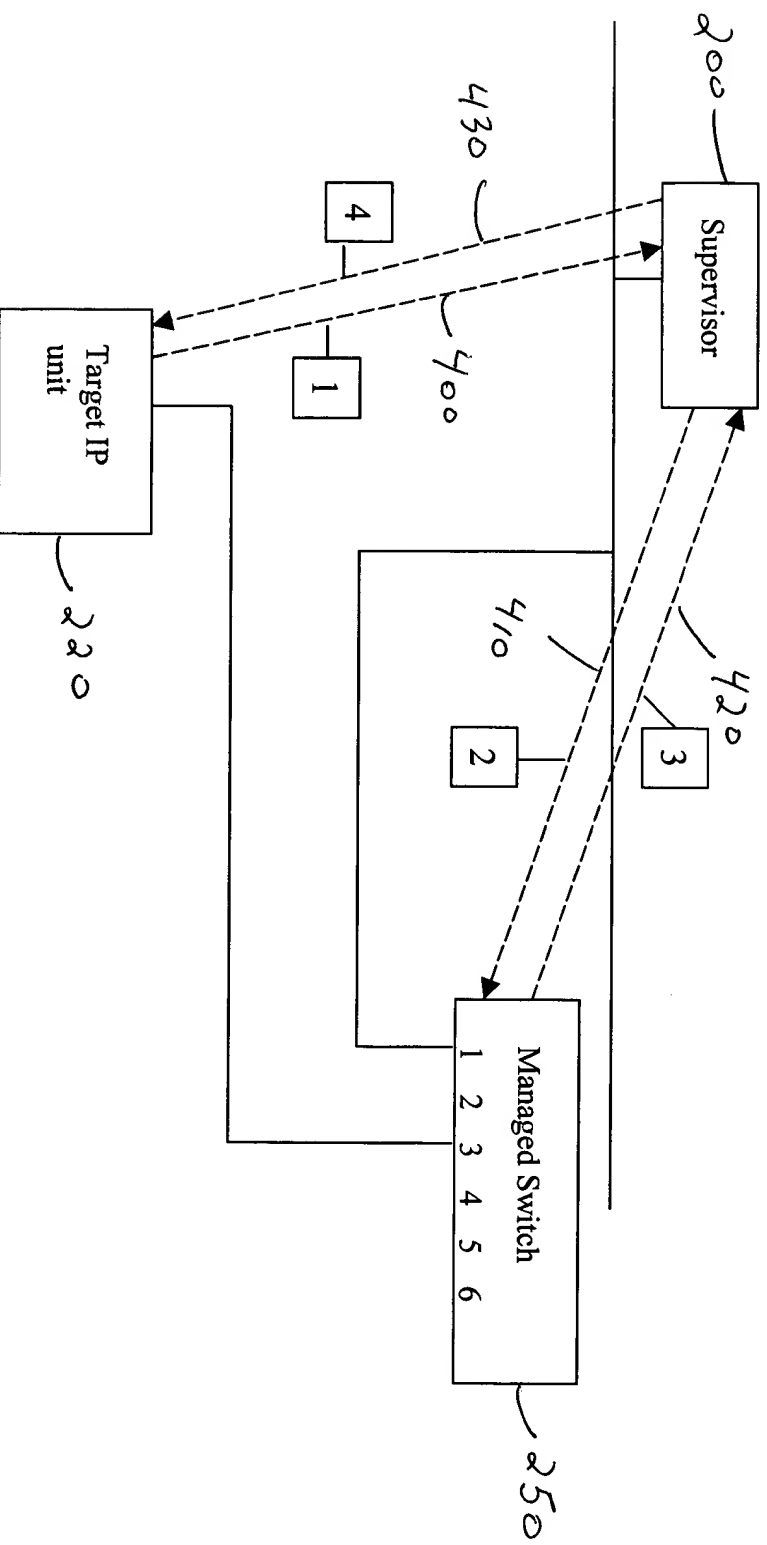
1. ARP Request - inquire MAC address of selected IP address 1.2.3.6 (unicast)
2. ARP response - MAC address of requested IP address is xxx

If no response is received, signify that the target IP unit is 'down'

If 1.2.3.6 is the ONLY unit on port 3 of the switch which is down, then it is a candidate for automatic reallocation. If any of the other units found on this port are also down, automatic reallocation will be suppressed.

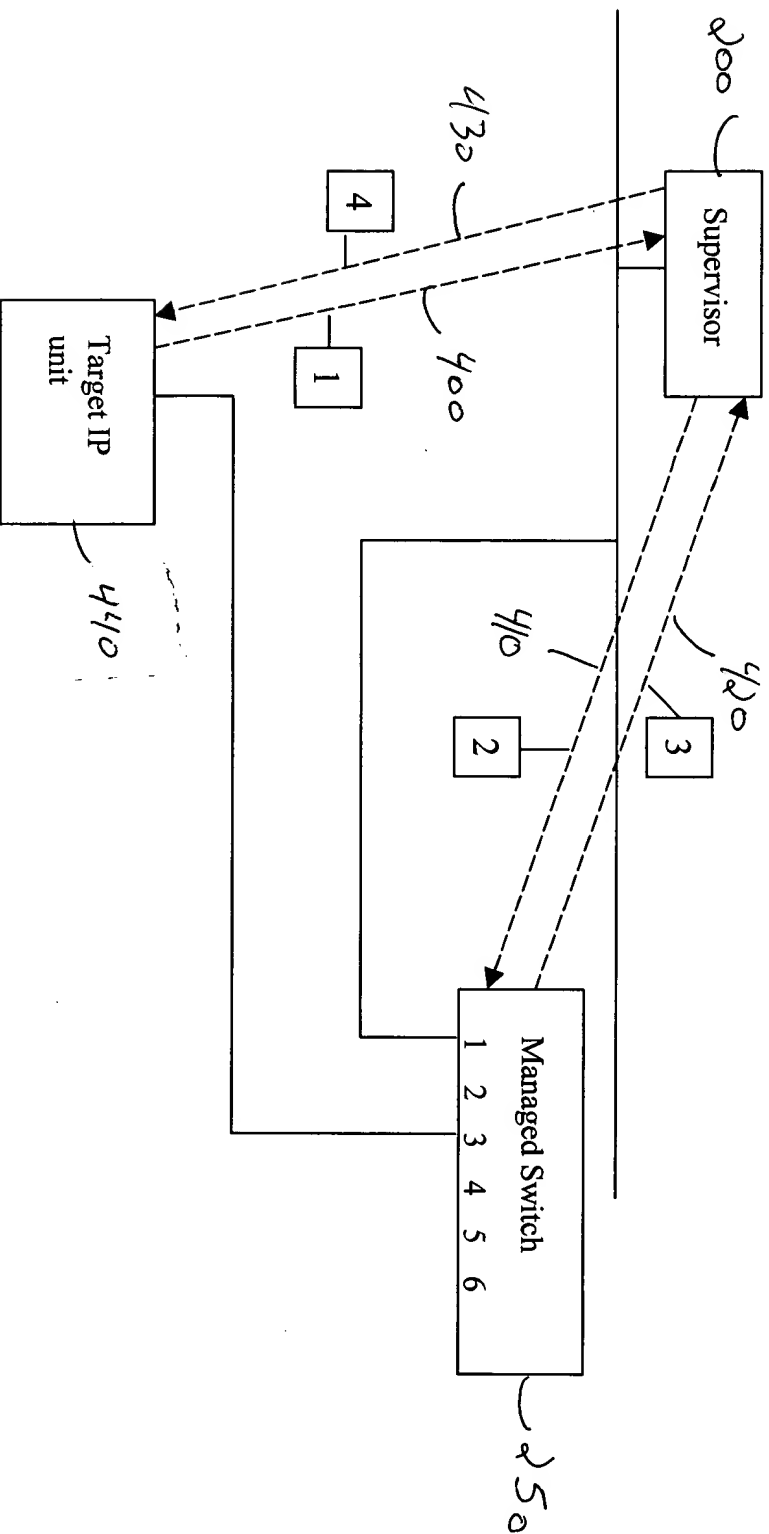


IP address assignment sequence. Target IP broadcasts request for address. The target was previously running at that location (eg. just reset or power cycled)



1. BOOTP request - please supply IP address for MAC xxx (broadcast)
2. SNMP Findport request - request port number of MAC xxx
3. SNMP Findport response - port number of MAC xxx was 3 (MAC xxx already associated with IP at that canonical location - OK to assign)
4. BOOTP response - IP address for MAC xxx is w.x.y.z

IP address reassignment sequence. Target IP broadcasts request for address. The target was NOT previously running at that location. A single target IP unit at that location is determined to be currently 'down', and is assumed to have been replaced with another using the same cable.



1. BOOTP request - please supply IP address for MAC xxx (broadcast)
2. SNMP Findport request - request port number of MAC xxx
3. SNMP Findport response - port number of MAC xxx was 3 (MAC xxx not known. However a **single** unit at that location is not currently responding. Update BOOTP equivalence table to record new IP assignment and authorize assignment)
4. BOOTP response - IP address for MAC xxx is w.x.y.z